I'd Been Doing It Wrong for So Long
It Looked Like Right to Me:
Using Case Method to Teach Introduction to
Applied Behavior Analysis

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Before you read beyond the first paragraph of this paper, I must issue the following warning: THIS ARTICLE CONTAINS NO DATA. READ AT YOUR OWN RISK! If you are put off by this disclosure, flip right on to the next article in this issue. But if you are intrigued by the possibility of finding out about a novel approach to teaching introductory applied behavior analysis, then please read on.

In the spring of 1993, I was very fortunate to have been invited to spend my sabbatical leave from Ohio Dominican College as a visiting professor in the Psychology Department at Keio University in Tokyo, Japan. My assignment at Keio would be to teach Introduction to Applied Behavior Analysis to 28 undergraduates. Although I was thrilled to have such a wonderful international opportunity, I was less than excited about teaching Introduction to Applied Behavior Analysis for the 30th time. I had grown so bored with this course that in recent years I had been assigning it to adjunct faculty so I could teach other classes. However, my Keio hosts, Professors Naoko Sugiyama and Masaya Sato, encouraged me to try any new methods I could come up with to teach this course. So challenged, I started looking at Introduc-

tion to Applied Behavior Analysis in a different light with renewed interest.

In previous renditions of this course, I had used several different textbooks, but the order of topics was always about the same. Using the text as my guide, I always taught punishment after reinforcement, recording and graphing toward the midpoint, maintenance and generalization at the end of the semester, and ethical issues at the beginning or the end, but never in the middle. My approach was to teach all the skills that students would eventually put to use in a project—a behavior-change program. I always used loads of examples in class, some real and some made up. I tried to work in a few *Journal of Applied Behavior Analysis (JABA)* studies at the end, if we had time. We rarely did. Looking back, I taught this course much like everyone else seemed to teach it.

Of course, I would be remiss if I did not admit that I was aware of some new and innovative wrinkles on the applied behavior analysis teaching scene—the use of SAFMEDS ("say all fast a minute each day shuffled") flash cards (Potts, Eshleman, & Cooper, 1993), response cards (Heward, 1994), the classic escapades of Captain Con Man (Malott, 1972), the current ones of Professor Grundy (Alberto & Troutman, 1990), and making students eat oat bran and yogurt for breakfast (Malott, 1991). But basically, most courses I was familiar with focused on terminology, principles, and techniques, driven by standard textbooks, and accompanied by the usual string of assignments and quizzes.

This time I wanted to experiment with something new. So I decided to step back and look at the big picture from a different perspective. I had always been fascinated by the case method of teaching, pioneered at the Harvard Graduate School of Business in 1912 and still used there and at many other business schools today. In traditional approaches, various principles of business management are taught first and then illustrative examples, some real and some hypothetical, are given, usually in a lecture format. In contrast, the Harvard Business School method uses real case studies that students analyze in great detail. From these analyses, students are able to discover the principles of business operation and management. Harvard Professor Malcolm McNair described the approach as one that "forces students to become 'detectives.' " (Ewing, 1990, p. 34). Why couldn't a similar approach be used in teaching Introduction to Applied Behavior Analysis? As it turned out, it could.

Here are a dozen suggestions for using case method to teach Introduction to Applied Behavior Analysis based on my Keio University experience.

A 12-Step Program for Case Method Users

1. Choose interesting and varied cases from *JABA*—do not assign a textbook. Use a selection of *JABA* studies as your text. Don't assign a textbook and don't use one yourself either—you don't need one because this material is basic and you know it already.

In choosing the case studies, I paid close attention to the fact that my audience would be substantially different from my usual one made up predominantly of prospective special education teachers. The Japanese students were mostly psychology majors, from sophomore to senior level. Some students had had no previous classes in psychology, whereas while others had had several, including another applied behavior analysis course. An added complication was that their fluency in English varied from being completely fluent to understanding about half of what was said in class. (I had a translator, of course.) After graduation, most of my Keio students would work for large companies or own stores or small businesses, and others would earn graduate degrees in psychology and work in clinics. Few would become teachers, so my usual focus on education examples would have to go.

My main criteria for choosing appropriate *JABA* studies were that they be very clear and straightforward, interesting to students, varied in setting and subject, and published during the last 6 years. The studies were chosen not necessarily on the strength of their results or design—I believe that all *JABA* studies are sufficiently strong from a scientific standpoint to serve as case examples.

The six studies I chose to open the course took place in a variety of settings—a hospital emergency room, a community pool, a school, a home, an outpatient clinic, and a supermarket. I used two additional studies conducted in an open pit mine (a particularly impressive study because data were collected over 12 to 15 years) and in a swimming practice pool. (A list of these studies is provided at the end of this article.)

2. Make up a short and catchy title for each case. The titles of published research articles are usually long and stuffy, and *JABA* titles are no exception. This is no problem, because you can simply rename them. It was fun to invent a short and catchy title for each study—for example, "Sit and Watch," "Night Waking," and "AIDS Prevention," which made it easy to refer back to previous studies.

3. Make the cases unavailable to students. Caution: Do not require or even allow the students to read the articles. In fact, hide those issues of *JABA* from which your cases were selected in a dark corner of the library. I say this because your students probably would

not read them anyway, or would not read them very well. But more important, if students know what is coming it will lessen the impact of this approach. You want their full attention when you first present each new and exciting case.

4. Start each case with a "hook." Read a current newspaper article, tell a personal anecdote, or pose a question about the students' own experiences with the target behavior to focus their interest on the case. For example, as a preface to introducing the "Skin Cancer Prevention" case, I read a *New York Times* article explaining the World Health Organization's warning about the dramatic increase in skin cancer from overexposure to the sun. I used another *Times* article, this one about a Japanese company's new soybean bologna product, to set up the "Supermarket Shoppers" study. I told of my own experiences dealing with children who were difficult to put to bed (this related to the "Night Waking" study) and, upon questioning, found that several students had had similar experiences dealing with younger siblings.

5. Be dramatic—tell the case like a story. I told each case in as dramatic a fashion as possible, starting with a "hook" followed by a general statement of the problem. The specifics of the case regarding the subjects, setting, and methods were described as the story unfolded. I hammed it up, and will admit to embellishing a bit here and there. I'm not advocating scientific fraud, but a little hype served to get and hold the students' attention.

6. Simplify the case whenever necessary. Don't get bogged down by telling every single detail of the case. For example, one of the studies included a second treatment group that was not essential to understanding the study or appreciating its impact. So I just left it out. I really do not think I sacrificed the integrity of any study by focusing on the basics.

7. Provide a structure with which students can analyze each case. Help students see a consistent framework for the cases. As I told the stories, students filled in a simple set of guided notes while I did the same on the overhead projector. We also used a checklist developed around the seven criteria in Cooper, Heron, and Heward's (1987) definition of applied behavior analysis to help us to see how well each study conformed with the definition.

8. Introduce technical terms and principles slowly and only as they come up in the cases. I explained technical terms such as baseline, shaping, positive reinforcement, time-out, performance feedback systems, and extinction within the context of the cases. I found it easier for students to understand issues, terms, techniques, and research design within the context of a whole case. Then the components make sense, and the students acquire functional knowledge. You will find that by using 8 to 10 studies you can effectively introduce most of the basic principles and procedures of applied behavior analysis.

On the fifth class I went through the steps in setting up an applied behavior analysis program. By then, selecting, defining, recording, and graphing a target behavior were not just abstract steps to be memorized, but were relevant procedures to which the students had been introduced in the context of real-life cases. Students could actually see a reason for learning and doing these steps. I kept referring to the six cases to show how behavior had been defined, how recording had been done, and so forth. Although the studies I chose did not represent all the possible terms, procedures, or research designs, it was easy to supplement them and to explain, for example, what a reversal design is and why it would have been inappropriate or unethical to employ it in some of the studies.

9. Use only the parts you need now—save some for later. For the first several weeks of the course, I told the results of each study using condensed and simplified results. I did not show any graphs until we had gone over

about half a dozen cases. This critical component came at a point when the students understood the applied behavior analysis process and when graphic presentations of data would make more sense. The students were already able to understand the big picture and to see how graphs enabled a visual analysis of what had happened in the cases.

10. Let your students be Monday morning quarterbacks. After the denouement and analysis of each case, I asked the students to suggest ways in which they would have set up the program differently to improve the results. They came up with many appropriate and practical ideas concerning changing the type or schedule of reinforcement or altering the intervention in a more advantageous way. (I explained that they were being Monday morning quarterbacks, although from the looks on their faces I think this concept may have been lost in translation.)

11. As you introduce each new case, keep referring to previous cases. As the semester progressed, I told how each study was different from or similar to previous ones. Here is where the short titles came in handy.

12. Give students a chance to solve real cases. Just as the students at the Harvard Business School "learn by doing, by putting themselves in the position of managers" (Kelly & Kelly, 1986, p. 15), I wanted my students to try their hands at being applied behavior analysts and applying their skills to real-life situations.

I developed three open-ended case studies based on actual situations. I originally wanted the students to discuss and solve the cases in small groups, but because of our language differences I ended up having them do analyses and applied behavior analysis plans individually. The first case was based on a *New York Times* article about how American companies were encouraging their employees to carpool or use public transportation in order to come into compliance with the Clean Air Act. The second case, from the *Japan Times,* explained that local

governments in Tokyo were receiving funds to try to solve the problem of dog owners allowing their dogs to bark, run loose, and leave their droppings in public parks. The third situation involved dealing with a difficult class in an elementary school in which many children lacked acceptable social skills. The students came up with excellent solutions that they presented in a logical and systematic manner.

In considering the case studies in a foreign country, it was interesting to see the ethical issues and cultural differences that came up throughout our discussions. For example, in the supermarket study, we discussed how American shoppers often shop once a week, whereas most Japanese buy groceries more often, in some cases daily. We talked about how this difference would affect the results of the supermarket study if it had taken place in Japan. In the Clean Air Act case, my students, all of whom commuted by public mass transit, were surprised at how many American employees drove to work alone in their cars.

Four Conclusions

From this experience, I came to four conclusions. First, one well-developed example can be better than many not-so-clear-or-meaningful examples. In all the years I taught applied behavior analysis back in the U.S.A. in the traditional way, I had as a mission teaching my students the difference between negative reinforcement and punishment. I used 10 transparencies with 10 examples on each. Each example showed antecedent-behavior-consequence (A-B-C) and effect on future behavior. I presented each example and had my students chorally respond, telling me if it was negative reinforcement or punishment. They were shaky on the first few transparencies, but by the fourth or fifth they made few errors. By the eighth they were firm. By the 10th they were perfect. I was proud. One week later, I put a new example on the board. A-B-C and effect on future be-

havior. But my question "Class, is it negative reinforcement or punishment?" was met with silence and confused looks. Finally one student said triumphantly "I know! This is a trick question! They're the same thing, right?" I yelled at all of them, "I can't believe this! Last week I gave you one hundred unrelated, out-of-context examples, and you still don't know this stuff?"

Now, having used the case study method in Japan, I am convinced that using a few examples that are well developed, dramatically told, and embedded in a real and meaningful context can be a better teaching tool than using many unconnected examples. A few examples can paint a complete, clear, and vivid picture and are easy to refer back to, whereas scads of isolated examples presented in a drill and practice mode can leave students momentarily fluent but without the ability to maintain or generalize their skills. Focusing on key examples in a case-method mode allows students to understand not only the process but also its application; in this way, the subject comes to life.

Second, teaching the *process* of behavior analysis works better than teaching isolated principles of behavior. Because applied behavior analysis is a logical, commonsense approach with real-life application, it should be taught in context and as an analysis process. There is a reason why it is called applied behavior analysis and not applied principles of behavior; principles learned out of context are principles that are likely to be forgotten or ultimately misapplied.

Third, an Introduction to Applied Behavior Analysis course should be applied from the first minute of the first class. I remember starting college as a math major by taking three semesters of calculus, but not realizing until I took physics in my senior year that calculus had any real-life application. But by then I was no longer a math major. We definitely need to put the applied back in applied behavior analysis.

And fourth, it is more interesting and motivating to both the students and the instructor to look at the big picture. I had been guilty of micro-managing this course, and case method helps to avoid this trap.

The students at Keio seemed interested in the class and did well on tests and the three problem sets. I wish I had been able to build in more active student responding, more discussion, and more teamwork, but given the language situation this was impractical.

With a traditional approach, I realized I had been teaching applied behavior analysis backwards. Looking back, I realize now I'd been doing it wrong for so long it looked like right to me. But the case method looks much righter. Next semester, you might want to give it a try.

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